

1. Sabiendo que: $|\text{Sen}\theta| = \frac{21}{29}$ y además:

$$\text{Tan}\theta \sqrt{-\text{Sen}\theta} < 0$$

calcule el valor de: $M = 7\text{Sen}\theta + 3\text{Cos}\theta$

- A) -2
D) 4
B) -3
E) 6
C) -5

$$M = 7\left(-\frac{21}{29}\right) + 3\left(\frac{20}{29}\right)$$

$$\frac{-147 + 60}{29}$$

$$= -3$$

$$\text{Tan}\theta \cdot \sqrt{-\text{Sen}\theta} < 0$$

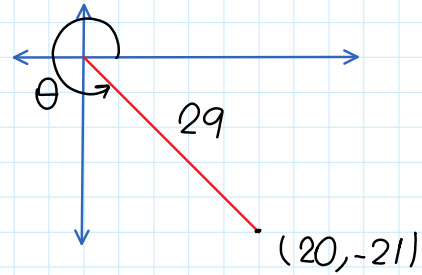
(-) (+)

$$\theta \in \text{IVC}$$

$$|\text{Sen}\theta| = \frac{21}{29}$$

$$-\text{Sen}\theta = \frac{21}{29}$$

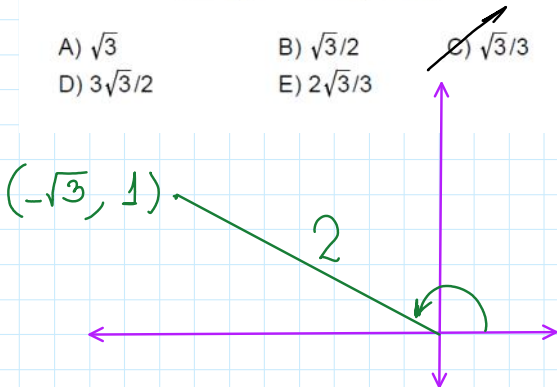
$$\text{Sen}\theta = -\frac{21}{29}$$



2. Si $x \in \text{IIIC}$, calcular el valor de " $\text{Sec}x - \text{Cot}x$ ", sabiendo además que:

$$(\text{Sen}x)^{2\text{Sen}x} = \text{Tan}(26^\circ 30')$$

- A) $\sqrt{3}$
D) $3\sqrt{3}/2$
B) $\sqrt{3}/2$
E) $2\sqrt{3}/3$
C) $\sqrt{3}/3$



$$(\text{Sen}x)^{2\text{Sen}x} = \left(\frac{1}{2}\right)^{2 \cdot \frac{1}{2}}$$

$$\text{Sen}x = \frac{1}{2}$$

$$\text{Sen}x = \frac{1}{4}$$

$$\text{Sec}x - \text{Cot}x$$

$$\frac{2}{-\sqrt{3}} - \left(-\frac{\sqrt{3}}{1}\right)$$

$$= -\frac{2\sqrt{3}}{3} + \sqrt{3}$$

$$= \frac{\sqrt{3}}{3}$$

3. Dada la igualdad: $\sqrt{\text{Tan}\theta + 1} = \text{Sen}\alpha$, donde " θ " no pertenece al II ó IV cuadrante; calcule el valor de: $E = \text{Sen}^2\alpha + \text{Cos}^2\theta$

- A) $1/3$
D) 2
B) 1
E) $2/5$
C) $5/6$

$$\theta \in \text{IC} \cup \text{IIIC} \text{ o ejes}$$

θ es cuadrantal

$$\text{Cos}\alpha = 0 \rightarrow \text{Sen}\alpha = \pm 1$$

$$\text{Tan}\theta = 0 \rightarrow \text{Cos}\theta = \pm 1$$

$$= 1$$

$$\sqrt{\text{Tan}\theta + 1} = \text{Sen}\alpha$$

$$\text{AL}^2: \text{Tan}\theta + 1 = \text{Sen}^2\alpha$$

$$\text{Tan}\theta = \text{Sen}^2\alpha - 1$$

$$\text{Tan}\theta = -\text{Cos}^2\alpha$$

$$- = -(+) \times$$

$$0 = -0$$

$$E = 1 + 1$$

$$E = 2$$

$$\tan \theta = 0 \rightarrow \cos \theta = \pm 1$$



$$E = 21$$

4. Si Φ es un ángulo negativo del tercer cuadrante mayor que $-\pi$ rad, hallar el signo de:

$$\frac{\cos(-\Phi)}{\sin(-\Phi)}, \frac{\cos\left(-\frac{\Phi}{2}\right)}{\sin\frac{\Phi}{2}}, \frac{\cot\left(-\frac{\Phi}{2}\right)}{\sec\frac{3\Phi}{2}}$$

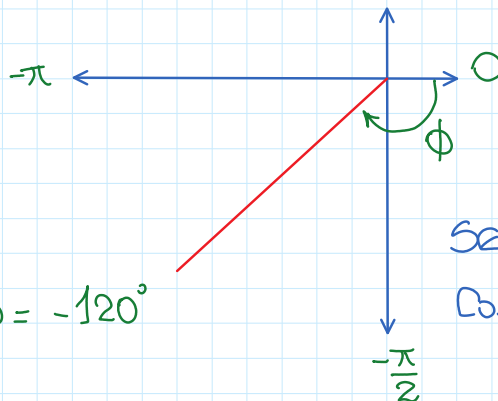
A) -; +; -

B) -; -; +

C) +; -; -

D) -; -; -

E) -; +; +



$$\phi = -120^\circ$$

$$\sin(-120^\circ) = -$$

$$\cos(-120^\circ) = -$$

$$\cot(-\Phi) = \cot 120^\circ = \ominus$$

$$\frac{\cos\frac{\Phi}{2}}{\sin\frac{\Phi}{2}} = \cot\frac{\Phi}{2} = \cot(-60^\circ) = \ominus$$

$$\frac{\cot(60^\circ)}{\sec(-180^\circ)} = \frac{+}{-} = \ominus$$

5. Si α y β son ángulos coterminales, además:
 $90^\circ < \alpha < 180^\circ$ y $\tan 2\beta = -0,5$, calcular el valor de:
 $M = \sqrt{5}(\sin 2\alpha + \cos 2\beta)$

A) 1
D) 2,5

B) 1,5
E) 3

C) 2

$$\beta - \alpha = 360^\circ$$

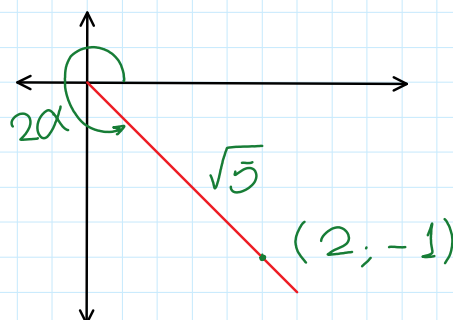
$$2\beta - 2\alpha = 360^\circ \quad (\text{X coterminales})$$

$$\tan 2\beta = -\frac{1}{2} = -\tan 2\alpha$$

$$90^\circ < \alpha < 180^\circ$$

$$180^\circ < 2\alpha < 360^\circ$$

III IV



$$M = \sqrt{5}(\sin 2\alpha + \cos 2\beta)$$

$$\sqrt{5} \left(-\frac{1}{\sqrt{5}} + \frac{2}{\sqrt{5}} \right)$$

$$1$$

6. Sabiendo que:

$$3^{\sin \alpha} \cdot 2^{\cos \beta} = \frac{(\sin 150^\circ \cdot \tan 225^\circ)^{\cos 300^\circ}}{(\sin 240^\circ \cdot \csc 330^\circ)^{\cot 135^\circ}}$$

calcular:

$$2^{\csc(180^\circ + \alpha)} \cdot 3^{\sec(180^\circ + \beta)}$$

A) 3/2

B) 4/9

C) 9/4

D) 2/3

E) 9/2

$$-\csc \alpha$$

$$-\sec \beta$$

$$3^{\sin \alpha} \cdot 2^{\cos \beta} = \frac{\left(\frac{1}{2} \times 1 \right)^{\frac{1}{2}}}{\left(-\frac{\sqrt{3}}{2} \times -2 \right)^{-1}}$$

$$3^{\sin \alpha} \cdot 2^{\cos \beta} = 2^{-\frac{1}{2}} \times 3^{\frac{1}{2}}$$

D) 2/3

E) 9/2

$$2^{-\csc \alpha} \times 3^{-\sec \beta}$$

$$2^{-2} \times 3^2$$

$$\frac{1}{4} \times 9$$

$$3^{\csc \alpha} \times 2^{\sec \beta} = 2^{-\frac{1}{2}} \times 3^2$$

$$\csc \alpha = \frac{1}{2} \text{ y } \cos \beta = -\frac{1}{2}$$

7. Reducir :

$$\csc \frac{577\pi}{7} \cdot \sec \frac{869\pi}{14}$$

$$\text{A) } \tan \frac{\pi}{14}$$

$$\text{B) } \cot \frac{\pi}{14}$$

$$\text{C) } \sec \frac{\pi}{7}$$

$$\text{D) } \csc \frac{\pi}{7}$$

$$\text{E) } \cot \frac{\pi}{7}$$

$$\begin{array}{r} 577 \overline{) 14} \\ 17 82 \\ \underline{3} \end{array}$$

$$\begin{array}{r} 869 \overline{) 14} \\ 84 62 \\ \underline{29} \\ 1 \end{array}$$

$$\csc \left(82\pi + 3\frac{\pi}{7} \right) \times \sec \left(62\pi + \frac{\pi}{14} \right)$$

$$\csc \frac{6\pi}{14} \times \sec \frac{\pi}{14}$$

$$+ \frac{\pi}{2}$$

$$\sec \frac{\pi}{14} \times \sec \frac{\pi}{14}$$

$$+ \pi/14$$